

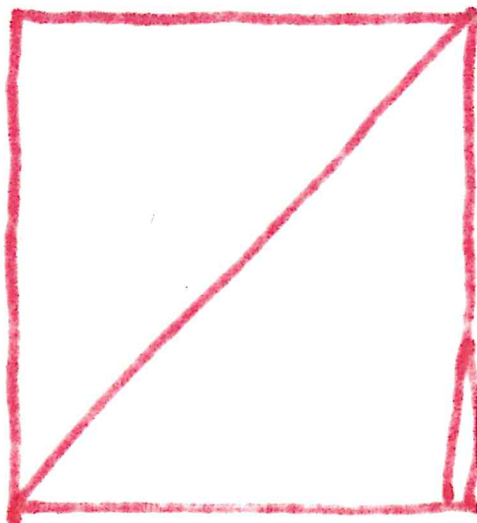
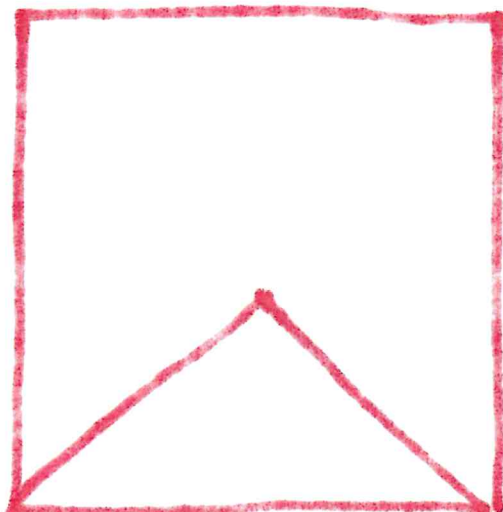
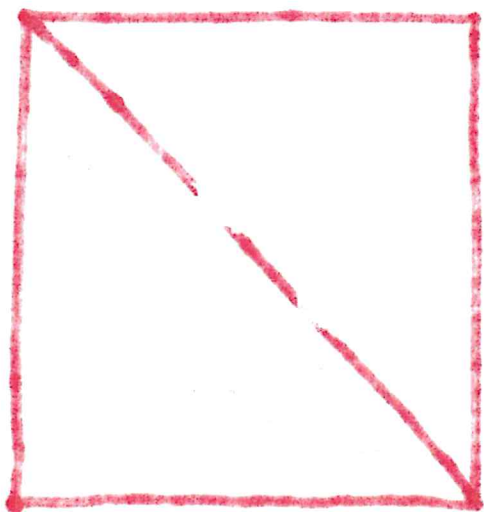
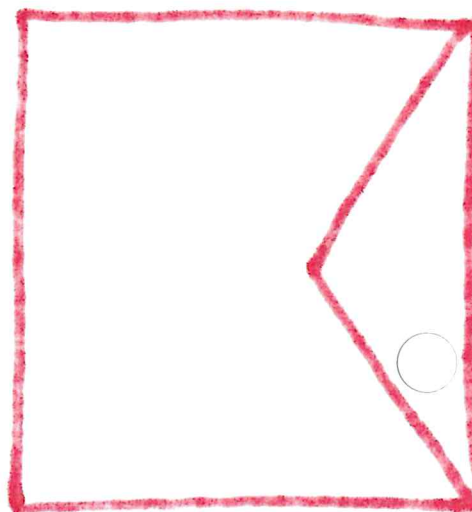
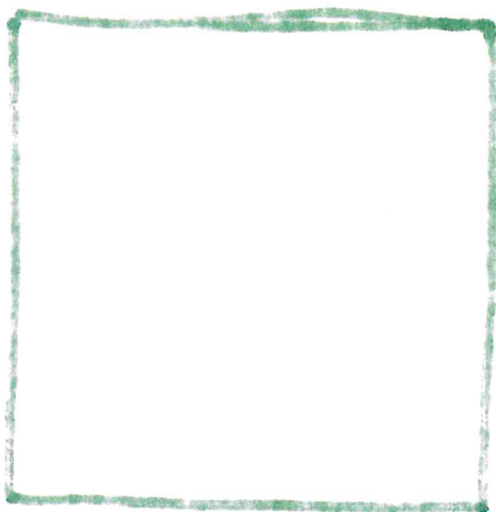
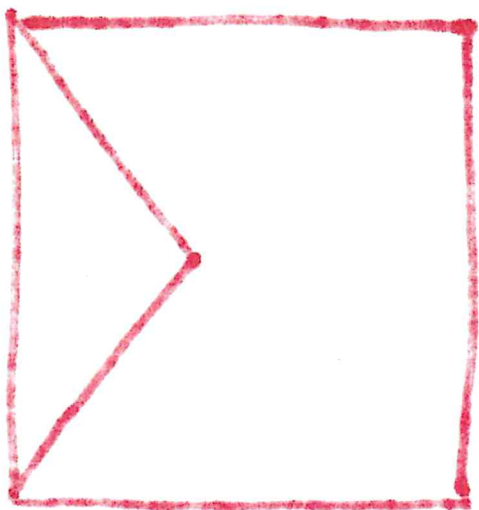
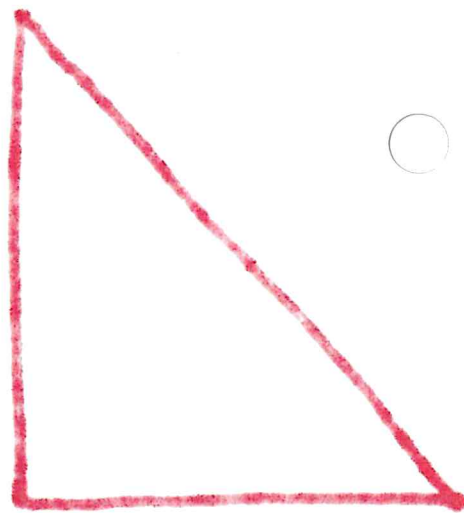
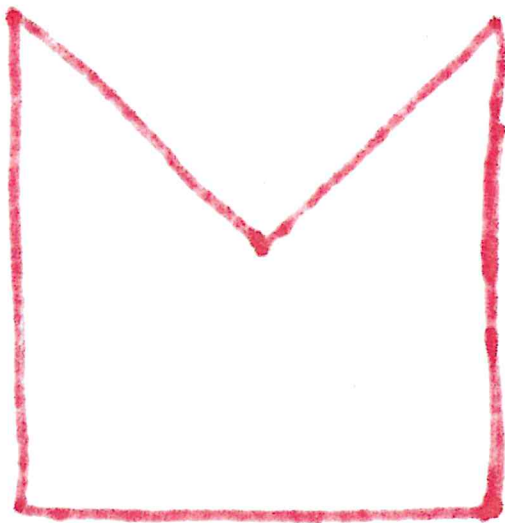
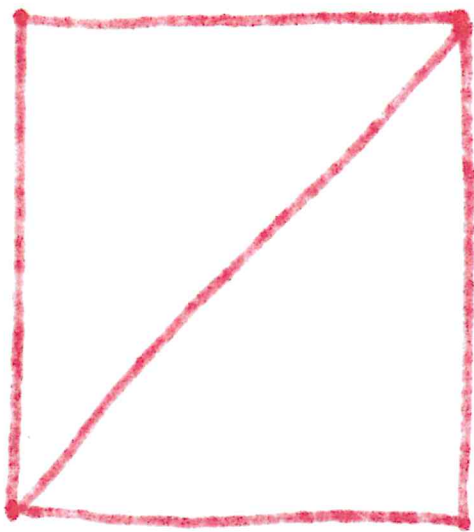


! MAKE YOUR OWN MATH PUZZLE !

- 1) Write in your math problem in the bigger box that looks like this 
- 2) Write in the answers in the box that corresponds that's like this 
- 3) Cut out your puzzle, mix up pieces and give to your partner.



Handwritten text at the bottom center, possibly a signature or date, written in green ink.

DODECAHEDRON DECIMALS

Software Connection

Mathematics: Number Sense and Number Properties

Focus

Place value in whole numbers and decimals, naming numbers

Grouping

Whole class, small groups

Materials

- Copies of the Dodecahedron Decimals activity sheet (1 per small group)
- Scissors
- Tape
- Pencils
- Notebook paper
- *big numberline on board or on paper*

Activity

1. Write the following number on the board and ask students to read it (eighty-three and five hundred twenty-one thousandths):

83.521

Ask what digit is in the tenths place (5), the tens place (8), the ones place (3), the hundredths place (2), and the thousandths place (1). Continue reviewing the concepts by writing other decimals on the board and asking similar questions.

2. Divide the class into small groups of four to six students. Give each group an activity sheet. Ask if anyone knows the name of a twelve-sided shape (dodecahedron). Have the students make dodecahedron dice by cutting out the pattern on the solid lines, folding under on the dashed lines, and taping into a dodecahedron.
3. Tell students that they will be playing Dodecahedron Decimals. Each player will need a pencil and notebook paper. Explain the rules:

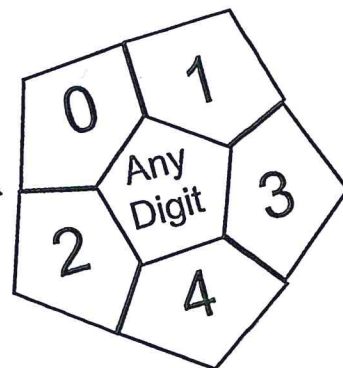
- Players will be writing decimals. For the first round, they should each begin with two blanks, a decimal, and two more blanks on their papers, as shown here:

____ . ____

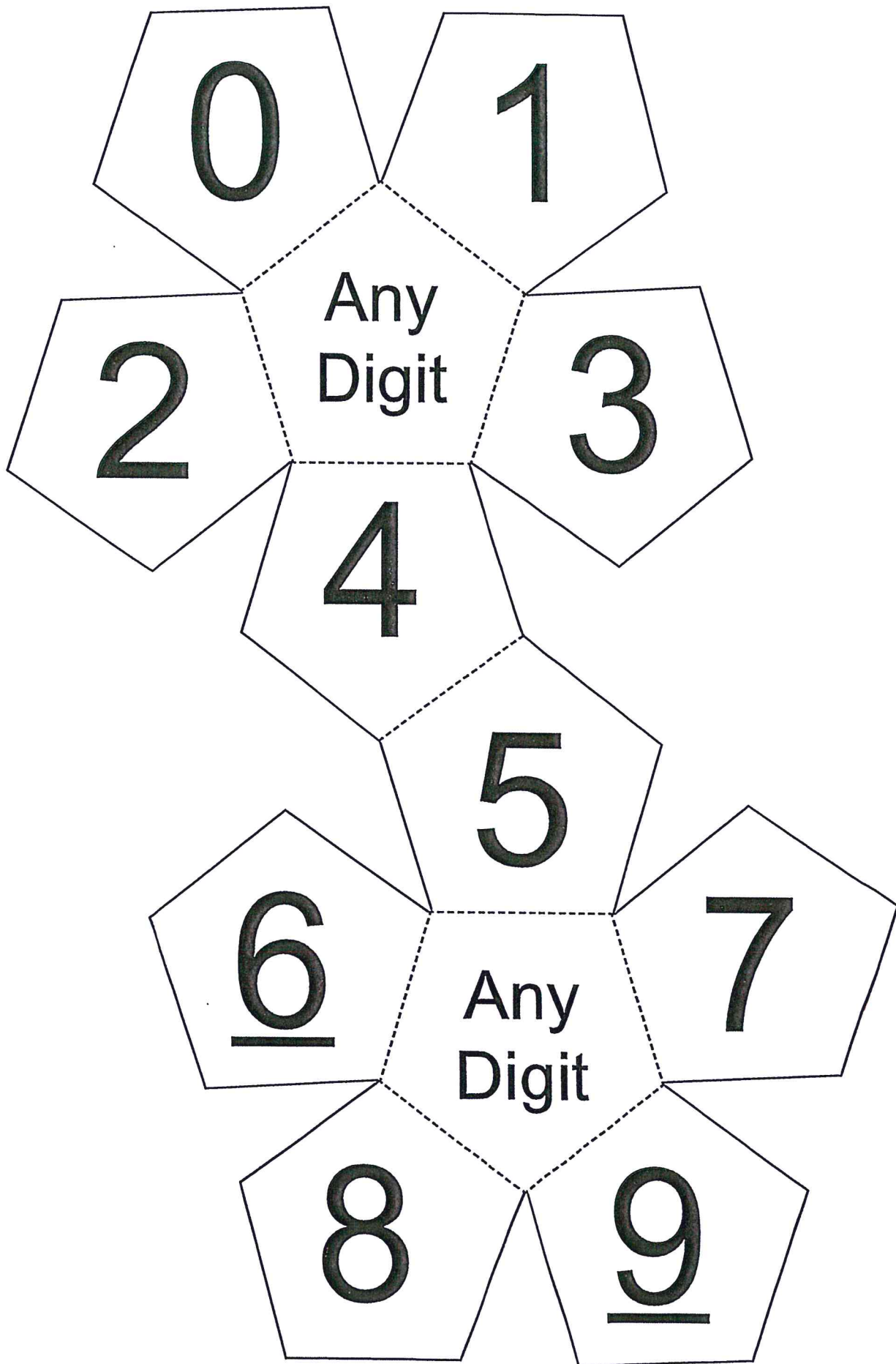
- Players take turns being the "caller." The caller rolls the die and calls out a digit, "three" for example. The other players can write the digit in a blank of choice. One player may choose to write it in the ones place (see below), while another player may choose to write it in the hundredths place.

____ **3** . ____

- If the caller rolls "Any Digit," each player can write a digit of choice in any blank.
- Once a digit is written, it cannot be moved. The caller continues to roll the die and call out digits, one at a time, until players have filled all of their blanks.
- Who has written the biggest number? To find out, players should compare their numbers. To score a point, the winning player(s) must read the number correctly *and locate it on the group's numberline*
- Play continues in this manner until everyone in the group has been the caller. Then, if desired, the teacher specifies a different number of blanks.
- The winner is the player in the group who has written the largest number the most times.



DODECAHEDRON DECIMALS



BAG OF BEANS

SUBJECT

Math

GROUPING

Small Groups

JUMPSTART MODULES

Math, Review

DESCRIPTION

In this game, students draw numbered beans out of a bag and employ subtraction skills to find the most advantageous combinations.

MATERIALS

Dried lima beans, several fine-tipped permanent markers, lunch bags (one per small group)

PREPARATION

Make a copy of the Bag of Beans activity sheet for each student. Enlist volunteers to write single-digit numbers from 0 to 9 on the beans. (Underscore the numbers 6 and 9 so they are distinguishable.) Put 3 beans, one of each number, in each bag.

PROCEDURE

Give each student a Bag of Beans activity sheet. Divide the class into groups of two to four. Ask one group to demonstrate a sample round of the game:

- Without looking, one player draws two beans from the bag (for example, 3 and 7) and places them side by side. Players record this 2-digit Target Number on their activity sheets.

The diagram shows a circle representing a bag of beans. Inside the circle, there are two subtraction problems. The first problem is labeled 'Target Number' and shows the numbers 3 and 7 in a box. Below it, the numbers 4 and 9 are in a box, followed by a minus sign and the numbers 1 and 6 in a box. The result is 3 and 3 in a box, labeled 'My Number'. The second problem is labeled 'Difference' and shows the numbers 3 and 7 in a box, followed by a minus sign and the numbers 3 and 3 in a box. The result is 0 and 4 in a box, labeled 'Difference'.

- Without looking, each player draws four beans from the bag (for example, 1, 4, 6, and 9) and arranges them to make two 2-digit numbers. When the numbers are subtracted, the result (My Number) should come as close as possible to the Target Number.
- Finally, each player calculates the Difference between the Target Number and My Number. The player closest to the Target Number (either above or below) wins the round.

EXTENSION

Play a more difficult version of the game using 3-digit numbers.

BAG OF BEANS

Target Number

My Number Difference

Target Number

My Number Difference

Target Number

My Number Difference

Target Number

My Number Difference

Target Number

My Number Difference

Target Number

My Number Difference



FOCUS

Math: rounding off numbers, sizes estimation, addition, measuring

SOFTWARE CONNECTION

Amazon River Hop, Save the Penguins

GROUPING

individuals or student pairs

ROUND OFF

SUPPLIES

copies of the Round Off Activity Sheet
(1 per student)
scissors
pencils

ACTIVITY

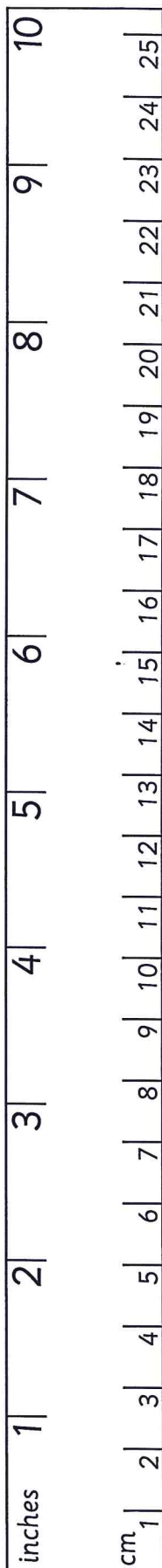
1. Review how to round off numbers to the nearest 5 or 10. Call out different numbers for student volunteers to round off, continuing until students understand the concept.
2. Distribute the activity sheets. Have students cut out the ruler at the left of the page (or substitute wood or plastic rulers and measuring tapes).
3. Have students work singly or in pairs. (In either case, each student should fill out an activity sheet.) Tell students to measure in inches, in centimeters, or in both. Explain how to complete the activity sheet:
 - Without measuring, estimate the dimension and record your estimate.
 - Measure the object and record the actual dimension. In some cases, your ruler will not be long enough, so you will need to measure one segment at a time and total the measurements. Tip: To measure your ankle, wrap your paper ruler around your ankle (or use a measuring tape).
 - Round off the measurement to the nearest 5 or 10 and record the answer.
 - For the last box on the page, select an object to measure. If you are working with a partner, each person can select a different object, and you can work together to complete the measurements.
4. When students are done, discuss their activity sheets. Were students' estimates relatively accurate? Were some dimensions harder to estimate than others (the ankle, for example)? Did students round off their measurements correctly?

My Desk
How long is it?
My estimate: 20 inches
My measurement: 24 inches
My rounded-off measurement: 25 inches

A Window
How wide is it?
My estimate: 50 inches
My measurement: 48 inches
My rounded-off measurement: 50 inches

My Ankle
How far around is it?
My estimate: 15 cm
My measurement: 21 cm
My rounded-off measurement: 20 cm

My Teacher
How tall is it?
(don't measure)
My estimate: 250 cm
My measurement: 186 cm
My rounded-off measurement: 185 cm



ROUND OFF

Activity Sheet

My Desk

How long is it?

My estimate: _____

My measurement: _____

My rounded-off measurement: _____

A Window

How wide is it?

My estimate: _____

My measurement: _____

My rounded-off measurement: _____

My Ankle

How far around is it?

My estimate: _____

My measurement: _____

My rounded-off measurement: _____

_____ (item to measure)

How _____ is it?

My estimate: _____

My measurement: _____

My rounded-off measurement: _____

No Fear of Fractions

Chase away the fear of fractions from your fifth graders. Here's how!

You will need:

- Paper
- Pen/pencil
- A wastepaper basket
- Ball



Instructions:

- This game can be played alone or with multiple players.
- Keep the wastebasket at least 6 feet away from the throw spot.
- Taking turns, players will attempt to throw the ball in the basket. Each player will get 10 attempts. As they throw, they will keep a tab on their individual hits and misses.
- After the first round, each player will represent her hit and miss scores in fractions. For examples, if Player A succeeded three times, her hit score will be $3/10$.
- Make the 2nd round more complex by giving each player 13 chances and then getting them to represent their scores in fractions as well as in decimals,
- Applying fractions and decimals to fun, real life situations will help make the concepts more relatable and easier to ace for the kids.

Asking
Students to
calculate
fractions
decimals
percentages
throughout

No Fear Fractions Record Sheet

Number Made: _____

Number of Attempts: _____

Fraction	Decimal	Percentage

Number Made: _____

Number of Attempts: _____

Fraction	Decimal	Percentage

Number Made: _____

Number of Attempts: _____

Fraction	Decimal	Percentage

Number Made: _____

Number of Attempts: _____

Fraction	Decimal	Percentage

Number Made: _____

Number of Attempts: _____

Fraction	Decimal	Percentage

How Many Sugar Packets?

Get your students to calculate the amount of sugar in common junk food items in terms of sugar packets. This proportion activity is one they'll remember for a while.

What you will need:

- A few sugar packets (optional)
- Popular junk food items (Oreos, soft drinks, chocolates)

Instructions:

1. Show the sugar packets to your students and ask them how many they think they can eat in fifteen minutes.
2. Discuss the health risks of eating large amounts of sugar.
3. Explain to the kids that they may be eating more sugar than they realize.
4. Distribute the food items and have students note down the amount of sugar in each product.
5. Explain that a sugar packet contains 4 grams of sugar.
6. Have them calculate the equivalent number of sugar packets in each product using the information available.
7. Have the students represent the data using a bar graph.



Building Scale Models

Objective:

To calculate the scale on which a toy model has been designed and constructed; to build several scale models of people, buildings, historical, or landscape objects.

Materials:

Measuring tools: rulers, tape measures, meter sticks, calculator

Procedure:

Part 1: The scale of a toy

- Create a table to record measurements of the toy object you have chosen
- Measure a variety of dimensions of the toy object and record on the table.
- Find a full-scale model of the object and measure the same dimensions as you measured on the toy model. Record in a new column on the table.
- Calculate the ratio of small object to large object for each measurement.
- Decide what the “scale factor” is for the toy model.
- Calculate a percentage figure that the small object represents of the large object.

Part 2: Create a scale model

- Using what you learned in Part I, create a scale model of a familiar or historical object (either larger or smaller).
- Use only materials that can be measured, cut, and fastened together (not molded—like clay. This is an engineering task!)
- Make a table of the related measurements. (Type it!)

Questions to answer

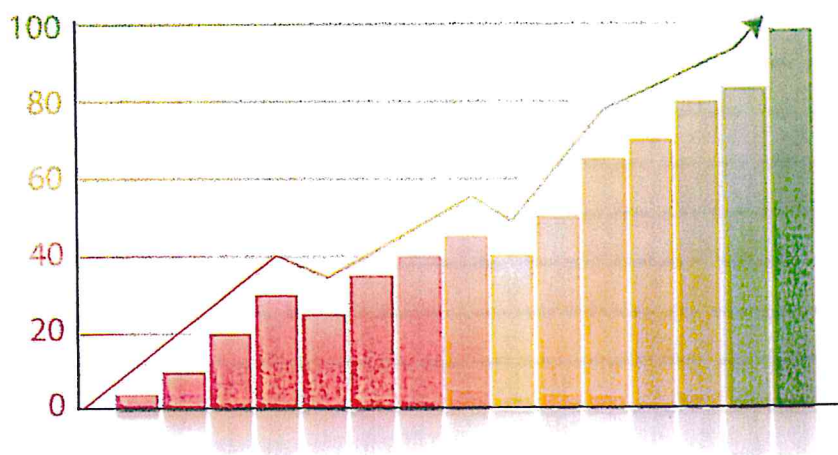
1. Write (type) an explanation of the object you have made a model of and of your process and what you learned while you were doing it (in terms of mathematical and engineering problem-solving).
2. What problems arose? Were they mathematical or engineering problems?
3. How did you handle the problems?
4. What did you learn?
5. What would you do differently next time?
6. What was satisfying about the project?

Grow Your Graph

Help your kids develop graphing skills with this fun 5th grade math activity on graphs.

You will need:

- Newspaper
- Pencil
- Paper
- Ruler
- Marker

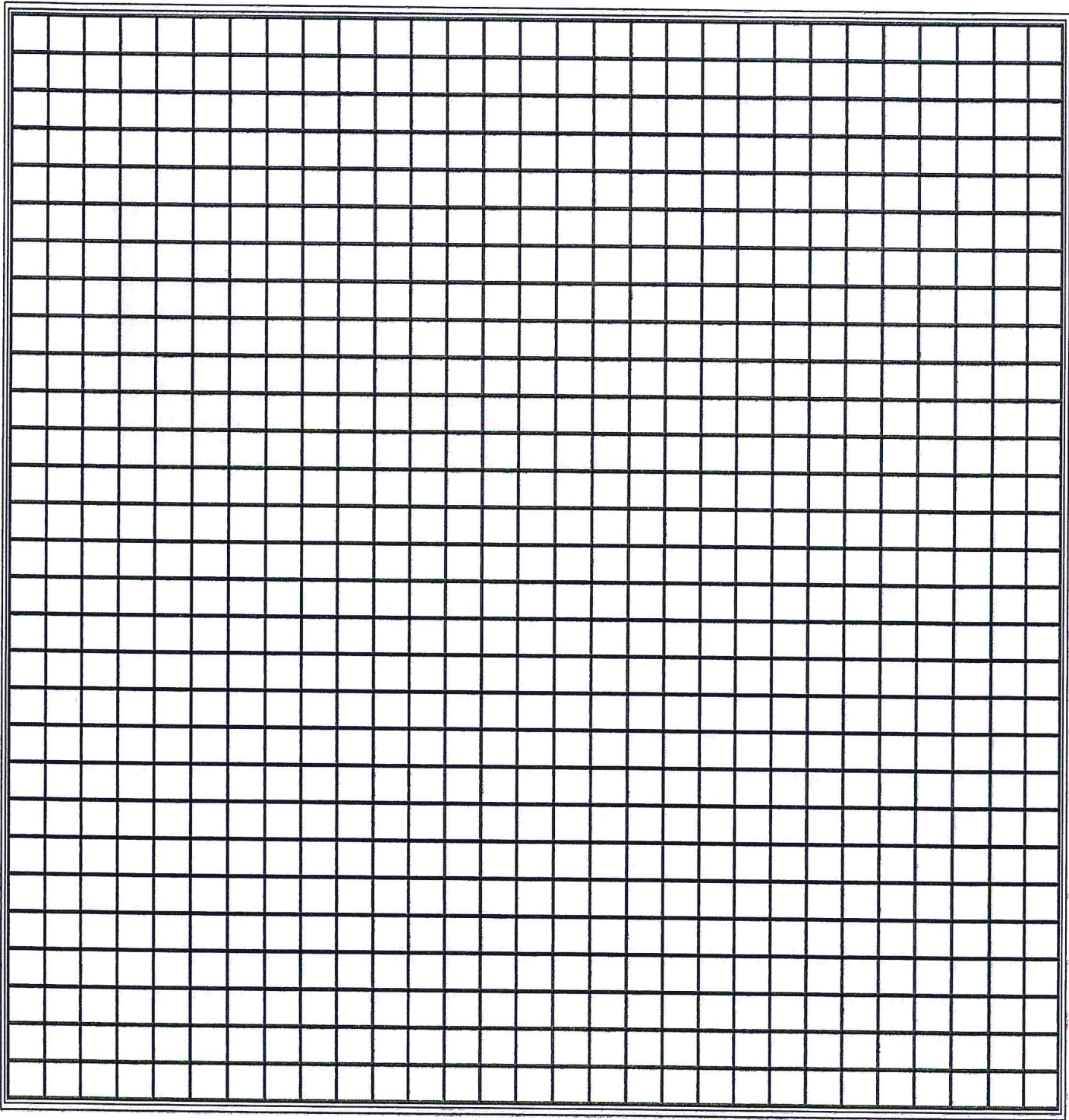


Instructions:

- Get your fifth grader to keep a diary and track temperatures for a week. Each morning, remind her to record the day's high and low temperatures. A daily newspaper or even a weather site can be used for gathering the data.
- At the end of a week, have your child make a graph to represent her findings. Suggest to her that the vertical axis can be used to represent the temperatures while the horizontal axis can represent the different days of the week. Have your fifth grader study her data, find out the lowest and highest recorded temperatures of the week and represent the numbers on the vertical axis accordingly.
- To make the graphical representations of high temperatures look different from the low ones, get your fifth grader to shade one and leave the other blank.
- Grow Your Graph helps make learning about graph diagrams more relatable and fun for kids by bringing the concept out of textbooks and making it a part of their daily lives.

**Graphing
Highs
and Lows**

Temperature



Day - of the Week